

ABSTRACT

A dielectric barrier discharge lamp lighting device includes a transformer (T) that supplies a driving voltage to a dielectric barrier discharge lamp (1) from a secondary coil (L2), and a driving circuit (4) that controls an input voltage to the transformer (T) to supply a driving voltage with a driving frequency f_d to the dielectric barrier discharge lamp (1). The self-resonant frequency f_r of the secondary coil, which is measured with the primary coil of the transformer being open, is equal to the driving frequency f_d or a frequency in the vicinity of the driving frequency f_d . This frequency f_r satisfies, for example, $0.9f_d \leq f_r \leq 1.3f_d$.